

### REMARKS

In the Office Action, the Examiner rejected Claims 1-18, which were all of the then pending claims, over the prior art, principally U.S. Patent 5,351,302 (Leighton, et al.). More specifically, Claims 1, 2, 5, 7, 8, 11, 13, 14 and 17 were rejected under 35 U.S.C. §102 as being fully anticipated by Leighton, et al. Claims 3, 4, 9, 10, 15 and 16 were rejected under 35 U.S.C. §103 as being unpatentable over Leighton, et al. in view of U.S. Patent 5,850,442 (Muftic); and Claims 6, 12 and 18 were rejected under 35 U.S.C. §103 as being unpatentable over Leighton, et al. in view of U.S. Patent 6,185,678 (Arbaugh, et al.).

The rejections of the claims are respectfully traversed for the reasons discussed below. Also, this opportunity is being taken to add new Claims 19 and 20, which are dependent from Claim 1, to describe preferred features of the invention.

The rejections of Claims 1-18 are respectfully traversed because the references do not show applying the digital signature procedure of the present invention to a title for a financial instrument.

To better understand the significance of this invention, it is believed helpful to discuss briefly modern cryptography.

Modern cryptography was invented and developed initially to secure electronic messages in two main ways (which can be used together although this is not always used and in fact often not preferable):

- 1) encrypting, i.e., making the content of a message unreadable to anyone who is not entitled access by being provided the key to decrypt said message; and
- 2) Signing, i.e., making sure that a message has been sent by an authorized party (for instance by the party declared to be the sender in the message).

Additional, important aspects of cryptography are the development of enablers or facilitators for the above basic functions.

Then, people began to realize that the power so developed to enable the emerging worlds built on top of computer sciences could be used in other aspects of human activity, involving for instance:

- authenticating images or any original creations such as text, music, etc (using some form of digital signature or the particular case of watermarks);
- authenticating money (although this has seldom been applied for a variety of reasons);
- authenticating physical documents such as tickets or other documents, an example of which is provided by Leighton, et al;
- enablement of electronic markets over open networks (such as the Internet), an example of which is provided by Muftic;
- various aspects of system management, an example of which is provided by Arbaugh, et al;
- document management systems, an example of which is provided by U.S. Patent 6,711,554, which was cited in the Office Action as prior art made of record;
- protection of solid goods against counterfeiting and grey markets;
- Alert and collaboration systems over the Internet;
- Secure electronic voting systems;
- Secure remote printing of non-duplicable documents;
- And many more.

Yet none of that, and in particular, no "method of digitally managing financial instruments" and even more particularly no "method of digitally managing financial instruments" such as described by Claims 1 of this application can be found as prior art to this invention. Since the invention of Leighton and others cited in the Office Action are built on top of the fundamental discoveries of classical and modern cryptography, they contain some similarities on details of implementation. But what has been invented, as described in this application, has not been anticipated by any of the art cited against the application, nor by any of the art the inventors new of at the time of the invention or have learned of since that time.

Applicants respectfully submit that, in the Office Action, the Examiner has misapplied Leighton, et al.

Leighton, et al. discloses a technique for preventing counterfeiting or otherwise illegal use of documents. In this technique, a title is provided with an identifier uniquely associated with the personal or real property that is the subject of the title, and information directly or indirectly identifying the legal owner of the property. The identifier and the information are concatenated into a data string, which is then digitally signed using a secret key of a public-key cryptosystem pair. To verify the title, a transaction terminal uses a corresponding public key to decrypt the data string.

In the Office Action, in paragraph, 1, the Examiner argued, regarding Claims 1, 7 and 13, that "Leighton substantially discloses the limitations of current application such as: creating digitally secure document using cryptography, concatenation of data strings, digital signature, etc [see the entire document particularly, Abstract; C1 L1 to C2 L 16], an owner, creating a title for a financial instrument, the title including (i) a message describing the title and how to contact the owner, and (ii) a digital signature of the owner [C1 L35-L68], the owner transferring ownership of the financial instrument to another person, including the steps of i) the owner appending to the title a public part of a signature scheme of said other person [C2 L51-L68], and ii) the owner signing the title using a public signature scheme of the owner [C2 L51-L68]" (emphasis added).

It is important to emphasize that this invention is not about title for physical property but for financial instrument. The words "a title for a financial instrument" are emphasized above because they do not pertain in any way to the cited art as can be read by any one in Leighton, et al, but only to a reading of said prior art in view of the present invention. Plainly, knowing the present invention, one of ordinary skill in the art would be able, using hindsight, to find a way to re-invent the invention on the basis of art which is itself based on the same fundamental field of cryptography.

It is thus clear that the way the paragraph in the Office Action starting with "Re. Claims 1, 7 and 13, Leighton substantially...", has been written is strongly influenced by the disclosure of the present application. This, it is respectfully submitted, does not provide an appropriate basis for the rejections of the claims.

Further in the Office Action, with respect to Claims 3, 4, 9, 10, 15 and 16, the Examiner argues that "Leighton discloses creating digital secure encrypted document (titles) using "public-key cryptosystem" [C1 L1 to C2 L16; C3 L31 to C4 L14].

Applicants submit that, here too, the Examiner is misapplying Leighton, et al. when the Examiner argues that Leighton discloses creating digital secure encrypted document (titles) using "public-key cryptosystem." What is important is that this invention is about titles to financial instrument, and that in fact this is a core proposition of the invention. The core of the present invention is to use cryptosystems, and in particular public-key cryptosystems to create and manage in new ways titles to FINANCIAL INSTRUMENT, and this application describes how this can be done in a way that is very well adapted to the new form of business that can be built using the invention.

Each of independent Claims 1, 7 and 13 describes the above-discussed aspect of the invention. In particular, Claims 1 and 13 both describe the step of an owner, creating a title for a financial instrument, the title including a message describing the title and how to contact the owner, and a digital signature of the owner. Independent Claim 7, which is directed to a system for digitally managing financial instrument, describes means for an owner to create a title for a financial instrument, the title including a message describing the title and how to contact the owner, and a digital signature of the owner.

As discussed above, Leighton, et al. does not disclose or suggest creating such a financial instrument.

The other references of record have been considered, and they too, whether considered individually or in combination, also fail to disclose or suggest creating the financial instrument as described in Claims 1, 7 and 13.

Furthermore, there are additional, important features of the invention that are not disclosed in or suggested by the prior art. For example, as indicted above, each of independent Claims 1, 7 and 13 describes the feature that the title includes a digital signature of the owner. Leighton, et al, in particular, does not disclose this feature. Instead with the technique described in Leighton, et al. the title is provided with a unique identifier of the property, and as an example, Leighton, et al. describes using a vehicle identification number. This, though, is completely different from the present invention. In effect, Leighton, et al. is directed more towards authenticating the property, while the present invention is directed more towards authenticating the owner. These two procedures are thus very different.

Moreover, in the preferred embodiment of the invention, the title is digitally signed using the public key of the signature scheme. That signature can then be checked using the private key of the signature scheme. Leighton, et al. uses a completely different approach. With the Leighton, et al. procedure, the identifier is encrypted using the private key of the encryption scheme. In this respect the preferred embodiment of the invention and the procedure disclosed in Leighton, et al are opposite of each other. Claim 19 describes this feature of the invention. This feature is of utility because, as a result, only the intended recipient is authorized to decrypt the owner's signature. This, in turn, helps to keep confidential the information provided by the owner. The procedure

described in Leighton, et al. has a different objective – the purpose of that procedure is to let the whole world know that the title is authentic.

Because of the above-discussed differences between Claims 1, 7 and 13 and the prior art, and because of the advantages associated with these differences, Claims 1, 7 and 13 patentably distinguish over the prior art and are allowable. Claims 2-6, 19 and 20 are dependent from Claim 1 and are allowable therewith. Similarly, Claims 8-12 are dependent from, and are allowable with, Claim 7; and Claims 14-18 are dependent from Claim 13 and are allowable therewith. The Examiner is, thus, respectfully asked to reconsider and to withdraw the rejection of Claims 1, 2, 5, 7, 8, 11, 13, 14 and 17 under 35 U.S.C. §102, and the rejections of Claims 3, 4, 6, 9, 10, 12, 15, 16 and 18 under 35 U.S.C. §103, and to allow Claims 1-20.

Every effort has been made to place this application in condition for allowance, a notice of which is requested. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully Submitted,

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